



# AIR & VAPOR BARRIER

## **FIRE RESIST** Barrithane™ VP

### Description

Barrithane VP is a fluid-applied, vapor-permeable membrane for use as an air and water resistive barrier in above-grade wall assemblies. The product is a 1-part, moisture-curing silane-terminated polyether (STPE). Barrithane VP is a high-solids, low VOC product. It is highly moisture resistant after cure, and can be applied over damp substrates. Barrithane VP will not freeze, can be installed at sub-freezing temperatures and resists rain wash-off immediately after installation. The formulation is also fire-retardant, which allows its use in many NFPA 285 wall assemblies. Barrithane VP is applied in single or multiple coats by roller or brush at 15-25 wet mils over exterior sheathing, and at 30-50 wet mils over masonry and concrete. Product can also be spray-applied using CCW-approved equipment and technique. Barrithane VP provides a monolithic, fully-adhered membrane.

### Features and Benefits

- Install as low as 15°F, rain resistant immediately after application, damp surface tolerant: Reliable all-season installation.
- Single coat installation on exterior sheathing, concrete and masonry substrates: reduces labor and time to install.
- High-solids, moisture-cure material: High coverage rate, low shrinkage during cure.
- Performs as an air and water resistive barrier on the interior side of masonry walls: can be used in retrofit and renovation of existing buildings.
- Fire-retardant formulation: Can be used in many wall assemblies requiring NFPA 285. Exempt from NFPA 285 requirement per 2015 IBC 1403.5 Exemption 2.
- Vapor-permeable chemistry: Permits use in wall assemblies where a vapor barrier is not needed
- 6 month UV resistance: Allows flexibility in schedule
- Low VOC: Meets <250 g/L requirement. No red diamond required for shipment and storage. Contributes to safety during installation.
- Monolithic and fully-adhered: Provides a highly air and watertight installation
- Non-asphalt STPE composition: Compatible with common self-adhered flashings and joint sealants
- Barrithane VP is a warranted system from Carlisle Coatings & Waterproofing



### Project Conditions

Building codes and project specifications require continuity of the air barrier installation. It is the installer's responsibility to understand the extent and sequencing of air barrier installation on the project. Do not proceed with installation until substrate and project conditions conform to requirements specified in this document. Identify any membranes, coatings, sealants, tapes and joint compounds by others which will contact Barrithane VP and CCW accessories, and verify compatibility through CCW. All surfaces shall be clean, dry-to-touch, frost free and of sound condition. Gaps and cracks shall be filled with materials and technique approved by CCW. Note especially that electrical/mechanical penetrations, structural steel penetrations, columns/ beams, expansion/ seismic joints, shelf angles, tie-ins to fenestration and transitions to other building assemblies may require extra work and materials to provide suitable surfaces for continuous installation of the air barrier. Consult Barrithane VP details for clarification.

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### Substrate Inspection

#### Concrete

Shall be cured in place 3 days minimum. It shall be smooth, with sharp protrusions such as cold joints ground flush. Honeycomb and holes/cracks shall be filled with grout or mortar.

#### Concrete Masonry Unit (CMU)

Mortar joints shall be struck flush or tooled and shall be free of voids. Mortar droppings shall be removed from brick ties and all other surfaces accepting Barrithane VP and CCW accessories.

#### Gypsum Sheathing

Sheathing boards shall be flush at joints, with gap between boards according to building code and sheathing manufacturer's requirements. Sheathing boards shall also be securely fastened to the structure with proper fastener type, technique and spacing according to building code and sheathing manufacturer's requirements. Sheathing boards shall be repaired or replaced if inspection reveals moisture damage, mechanical damage or if sheathing boards have exceeded the exposure duration or exposure conditions as required by the sheathing manufacturer.

#### OSB, Plywood, Lumber, Pressure-Treated Wood

Wood sheathing inspection carries the same protocol given for gypsum sheathing. Also, moisture content, measured with a wood moisture meter in the core of the substrate, shall be below 20%. Do not cover any wooden materials with Barrithane VP or CCW accessories if moisture content is 20% or above. Do not encapsulate wood (such as nailers) with membrane, as this will cause premature rot. In most cases fire-treated and pressure-treated wood must be kiln dried to accommodate the less than 20% moisture content requirement.

### Installation

Before application, obtain full, safe access to the area and mask adjacent surfaces to protect from splashes or drips. Verify that the product is within shelf life, as indicated on the product label.

The following conditions shall be detailed in accordance with Barrithane VP standard details:

- Sheathing joints: cover with 2" width tooled ribbon of Barribond or cover with embedded 4" width strip of DCH Reinforcing Fabric
- Rough openings, pipe/duct penetrations, sheathing inside/outside corners shall be treated with one of these methods: 1) 705 FR-A/705 FR-A XLT strip; 2) Trowel application 40 mils wet thickness of Barribond or; 3) Single or multiple coats of Barrithane VP to build minimum 40 mils total wet thickness. If method 2 or 3 is used, fill all cracks and holes with Barribond and coat raw edges of gypsum sheathing with CCW contact adhesive.
- Expansion joints, control joints, termination at head/foot of wall, transitions of dissimilar materials: 705 FR-A/705 FR-A XLT strip bearing 3" onto each side of joint.

Prepare wall substrates accepting CCW self-adhered flashings with CCW-702, CCW-702 LV, CCW-702 WB, CAV-GRIP or Travel-Tack™ contact adhesive. Prepare cured Barrithane VP membrane accepting CCW self-adhered flashings with CAV-GRIP or Travel-Tack contact adhesive.

Corner treatments shall cover the transition and extend at least 3 inches on each side. Rough opening treatment shall extend 3 inches minimum onto the wall and shall return into the rough opening deep enough to provide continuous seal of the fenestration to the air barrier. Consult Barrithane VP details for more information. All terminating edges of CCW self-adhered flashing shall be covered with a 1" width tooled ribbon of Barribond.

Open pail and apply Barrithane VP using a paint roller, brush or approved spray technique. On glass mat faced gypsum, plywood and OSB sheathing substrates, apply in single or multiple coats as follows: 15-25 mils wet thickness on exterior wood or gypsum sheathing substrates; 30-50 wet mils thickness on concrete or masonry substrates. If multiple coats are used, allow 1st coat to cure firm before applying second. Coat all opaque surfaces and Barribond details. Lap onto 705 FR-A flashing details as shown in Barrithane VP drawings. Provide sufficient coverage for an opaque, pinhole-free coating over all surfaces.

Barrithane VP may be left exposed up to 6 months (180 days). If the membrane is damaged during exposure, repair damaged membrane by removing loosely adhered material, cleaning the surface and coating the damaged area with the corresponding minimum wet thickness of Barrithane VP. Do not cover Work until it has been inspected and approved.

## Clean Up

Promptly clean uncured Barrithane VP with solvent, such as xylene or mineral spirits. Cured product must be removed mechanically.

## Limitations

- Do not apply during rain or snow.
- Do not apply over wet or frosty surfaces.
- Prepare cured Barrithane VP surfaces accepting CCW self-adhered flashings with CAV-GRIP or Travel-Tack. Do not use CCW-702, 702 LV or 702 WB or other adhesives/primers in this application.
- Not for below-grade waterproofing, deck waterproofing or roofing.
- Not intended for traffic resistance or as a wearing surface.

## Delivery, Storage & Handling

Store Barrithane VP product and accessories in an area protected from direct sunlight and precipitation. Condition Barrithane VP pails to 50°F to 80°F before use to facilitate roller and brush application. Once the Barrithane VP pail is opened, use entire contents as soon as possible. For longer term storage, keep Barrithane VP pails in a cool, dry area below 80°F. Shelf life of Barrithane VP, stored under these conditions, is 12 months from the date of manufacture.

## Packaging

Product	Description	Size
<b>Main Product</b>		
Barrithane VP	STPE-based air and water resistive barrier	5-gallon pail
<b>Self-Adhered Flashing and Contact Adhesives</b>		
705 FR-A/ 705 FR-A XLT	40-mil self-adhering sheet flashing/membrane, 35 mils of rubberized asphalt + 5 mils aluminum/HDPE composite facer. 705 FR-A for installation at 40°F and above. 705 FR-A XLT for installation at 15°F to 60°F.	36" x 75' roll 100' rolls of 24", 18", 12", 9", 6" and 4" width
CAV-GRIP	Aerosol spray contact adhesive packaged in pressurized cylinders. Reusable spray gun and 6', 12' or 18' hoses are sold separately and are attached to cylinder for dispense.	40# cylinder with 30-lb. fill weight of adhesive
Travel-Tack	Aerosol spray contact adhesive packaged in portable spray cans	15 oz can, 12 per case
CCW-702	Standard solvent-based contact adhesive	5-gal pail
CCW-702 LV	OTC-compliant, solvent-based contact adhesive	5-gal pail
CCW-702 WB	Water-based contact adhesive	5-gal pail
<b>Sealants</b>		
Barribond	High-solids, low VOC STPE-based liquid flashing and detail sealant.	20 fl-oz sausages, 16 per case

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### Typical Properties

Property	Test Method	Results
Color		Dark Gray
Chemistry		STPE
% Solids		88%
VOC	EPA Method 24	166 g/L
Mil Thickness (sheathing)	Comb gauge	15-25 wet (13-22 dry)
Mil thickness (CMU)	Comb gauge	30-50 wet (26-44 dry)
Coverage Rate on Sheathing	% solids calculation	60 to 100 sf/gal
Coverage Rate on Concrete & CMU	% solids calculation	30 to 50 sf/gal
Cure Time of 20-40 mil coating at 75/50% RH		Cure through in 2-4 h
Minimum Application Temp		15°F
Maximum Service Temp		180°F
Maximum Exposure		180 Days
Shore A Hardness	ASTM D 2240	48
Tensile Strength	ASTM D 412	100 psi
Elongation	ASTM D 412	400%
Elastic Recovery	ASTM D 412	100% recovery @ 100% elongation
Pull-off adhesion	ASTM D 4541	Substrate Failure on gypsum sheathing, 240 psi on CMU
Water Penetration - CMU Substrate	AATCC 127	40 mils Barrithane VP. No leakage after 5h under 55 cm (22") water column.
Water Penetration – Gyp Sheathing w/ Joint	AATCC 127	20 mil Barrithane VP, 40 Mils Barribond over joint: No leakage 55cm (22") water column.
Air Permeance	ASTM E 2178	0.0002 L/s*m <sup>2</sup> @ 75 Pa (0.00004 CFM/ft <sup>2</sup> @ 1.57 PSF)
Air Permeance on CMU Substrate	ASTM E 2178, modified	0.013 L/s*m <sup>2</sup> @ 75 Pa (0.0026 CFM/ft <sup>2</sup> @ 1.57 PSF)
Air Leakage through Assembly	ASTM E 2357	Max 0.0041 L/s*m <sup>2</sup> @ 75 Pa (0.00082 CFM/ft <sup>2</sup> @ 1.57 PSF) Penetrated specimen, after load sequence

Property	Test Method	Results
Water Leakage through Assembly	ASTM E 331	No Leaks after 2h @ -6.24PSF, No Leaks after 15 min @ -15 PSF Passed Two Tests: * 20 mil membrane on exterior side of gyp sheathing/steel stud wall (ASTM E 2357 Penetrated Wall specimen) * 35 mil membrane on interior side of CMU wall
Water Vapor Permeance	ASTM E 96 B (water method)	11.1 Perms @ 40 mils 29.6 Perms @ 20 mils
	ASTM E 96 A (desiccant method)	5.1 Perms @ 40 mils 16.5 perms @ 20 mils
Low Temp Flex	ASTM D 1970	pass at minus 20°F
Nail Sealability	ASTM D 1970	pass @ 20 mils thickness
Low Temp Crack Bridging	ASTM C836/ C1305	40 mil membrane, no cracking after 10 cycles at minus 15°F
Surface Burning	ASTM E 84	50 mil membrane: Flame 20 Smoke 250
		20 mil membrane: Flame 0 Smoke 0
Heat Release by Cone Calorimeter, 50 mil Membrane	ASTM E 1354 (50 kW/m <sup>2</sup> heat flux)	HRRPeak 129 kW/m <sup>2</sup> THR 16 MJ/m <sup>2</sup> EHC 12.2 MJ/kg
Heat Release by Cone Calorimeter, 20 mil Membrane	ASTM E 1354 (50 kW/m <sup>2</sup> heat flux)	HRRPeak 142 kW/m <sup>2</sup> THR 6 MJ/m <sup>2</sup> EHC 10.01 MJ/kg
Vert and Lateral Fire Propagation	NFPA 285	Pass in many wall assemblies. Priest & Associates EEV 10123 for Carlisle Coatings & Waterproofing.

\*Product takes longer to cure at lower ambient temperature and lower humidity.  
\*\*Coverage rate is based on volume calculations and does not account for waste.

### Limited Warranty

Carlisle Coatings & Waterproofing Incorporated (Carlisle) warrants this product to be free of defects in workmanship and materials only at the time of shipment from our factory. If any Carlisle materials prove to contain manufacturing defects that substantially affect their performance, Carlisle will, at its option, replace the materials or refund its purchase price. This limited warranty is the only warranty extended by Carlisle with respect to its materials. There are no other warranties, including the implied warranties of merchantability and fitness for a particular purpose. Carlisle specifically disclaims liability for any incidental, consequential, or other damages, including but not limited to, loss of profits or damages to a structure or its contents, arising under any theory of law whatsoever. The dollar value of Carlisle's liability and buyer's remedy under this limited warranty shall not exceed the purchase price of the Carlisle material in question.